

## **AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Previously Presented) A three-dimensional object manipulating apparatus, comprising:

a display means for displaying a three-dimensional object on the screen of a display unit;

a coordinate detecting means for detecting a coordinate defined on the display screen by a user's touch;

a determination means for determining an axis and direction of rotation for the three-dimensional object in a predetermined cycle on the basis of the coordinate detected by the coordinate detecting means; and

an object rotating means for rotating the three-dimensional object on the basis of the result of determination supplied from the determination means;

wherein the determination means determines the axis and direction of rotation for the three-dimensional object on the basis of a positional relation between the coordinate detected by the coordinate detecting means and a central coordinate on the display screen; and

wherein the determination means further determines a rotating speed for the three-dimensional object on the basis of a distance between the coordinate detected by the coordinate detecting means and a central coordinate on the display screen, and the object rotating means rotates the three-dimensional object at the determined speed.

2. (Canceled).

3. (Canceled).

4. (Previously Presented) A three-dimensional object manipulating apparatus, comprising:

a display means for displaying a three-dimensional object on the screen of a display unit;

a coordinate detecting means for detecting a coordinate defined on the display screen by a user's touch;

a determination means for determining an axis and direction of rotation for the three-dimensional object in a predetermined cycle on the basis of the coordinate detected by the coordinate detecting means; and

an object rotating means for rotating the three-dimensional object on the basis of the result of determination supplied from the determination means wherein the determination means determines an axis and direction of rotation for the three-dimensional object on the basis of a positional relation between the coordinate detected by the coordinate detecting means and the three-dimensional object on the display screen; and

wherein the determination means determines a rotating speed for the three-dimensional object on the basis of a distance between the coordinate detected by the coordinate detecting means and barycentric coordinate of the three-dimensional object on the display screen, and the object rotating means rotates the three-dimensional object at the determined speed.

5. (Canceled).

6. (Previously Presented) A three-dimensional object manipulating apparatus, comprising:

a display means for displaying a three-dimensional object on the screen of a display unit;

a coordinate detecting means for detecting a coordinate defined on the display screen by a user's touch;

a determination means for determining a moving direction for the three-dimensional object in a predetermined cycle on the basis of the coordinate detected by the coordinate detecting means and barycentric coordinate of the three-dimensional object on the display screen; and

an object moving means for moving the three-dimensional object on the basis of the result of determination supplied from the determination means;

wherein the determination means determines a moving speed on the basis of a distance between the coordinate detected by the coordinate detecting means and a barycentric coordinate of the three-dimensional object on the display screen, and the object moving means moves the three-dimensional object at the determined speed.

7. (Canceled).

8. (Previously Presented) A three-dimensional object manipulating apparatus, comprising:

a display means for displaying a three-dimensional object on the screen of a display unit;

a coordinate detecting means for detecting a coordinate defined on the display screen by a user's touch;

a determination means for determining whether the three-dimensional object is to be scaled up or down in a predetermined cycle on the basis of the coordinate detected by the coordinate detecting means; and

an object scale-up/-down means for scaling up or down the three-dimensional object on the basis of the result of determination supplied from the determination means.

9. (Currently Amended) A three-dimensional object manipulating method in which a display screen unit, a data processor, and a touch sensitive coordinate detector ~~which detects a coordinate defined on the display screen by a user's touch~~ are used, the method comprising the steps of:

displaying, under control of the data processor, a three-dimensional object on the display screen;

detecting a first coordinate defined on the display screen by a user's touch;

determining, under control of the data processor, an axis and direction of rotation for the three-dimensional object in a predetermined cycle on the basis of the first coordinate detected by the coordinate detector; ~~and~~

rotating, under control of the data processor, the three-dimensional object on the basis of the result of determination;

wherein the data processor determines the axis and direction of rotation for the three-dimensional object on the basis of a positional relation between the first coordinate ~~detected by the coordinate detector~~ and a central coordinate on the display screen; and

wherein the data processor further determines a rotating speed for the three-dimensional object on the basis of a distance between the first coordinate ~~detected by the coordinate detector~~ and a central coordinate on the display screen, and rotates the three-dimensional object at the determined speed[[.]];

detecting a second coordinate defined on the display screen by a user's touch;  
and

dynamically changing the axis, direction, and speed of rotation based on the second coordinate.

10. (Canceled).

11. (Canceled).

12. (Currently Amended) A three-dimensional object manipulating method in which a display screen unit, a data processor, and a touch-sensitive coordinate detector ~~which detects a coordinate defined on the display screen by a user's touch~~ are used, the method comprising the steps of:

displaying, under control of the data processor, a three-dimensional object on the display screen;

detecting a first coordinate defined on the display screen by a user's touch;

determining, under control of the data processor, an axis and direction of rotation for the three-dimensional object in a predetermined cycle on the basis of the first coordinate detected by the coordinate detector; ~~and~~

rotating, under control of the data processor, the three-dimensional object on the basis of the result of determination;

wherein the data processor determines an axis and direction of rotation for the three-dimensional object on the basis of a positional relation between the first coordinate ~~detected by the coordinate detector~~ and the three-dimensional object on the display screen; and

wherein the data processor further determines a rotating speed for the three-dimensional object on the basis of a distance between the first coordinate detected by the coordinate detector and barycentric coordinate of the three-dimensional object on the display screen, and rotates the three-dimensional object at the determined speed[[.]];

detecting a second coordinate defined on the display screen by a user's touch;

and

dynamically changing the axis, direction, and speed of rotation based on the second coordinate.

13. (Canceled).

14. (Previously Presented) A three-dimensional object manipulating method in which a display unit, data processor and a coordinate detector which detects a coordinate defined on the display screen by a user's touch are used, the method comprising the steps of:

displaying, under control of the data processor, a three-dimensional object on the display screen;

determining, under control of the data processor, a moving direction for the three-dimensional object in a predetermined cycle on the basis of the coordinate detected by the coordinate detector; and

moving, under control of the data processor, the three-dimensional object on the basis of the result of determination;

wherein the data processor further determines a moving speed for the three-dimensional object on the basis of a distance between the coordinate detected by the coordinate detector and barycentric coordinate of the three-dimensional object on the display screen, and moves the three-dimensional object at the determined speed.

15. (Canceled).

16. (Previously Presented) A three-dimensional object manipulating method in which a display unit, data processor and a coordinate detector which detects a coordinate defined on the display screen by a user's touch are used, the method comprising the steps of:

displaying, under control of the data processor, a three-dimensional object on the display screen;

determining, under control of the data processor, whether the, three-dimensional object is to be scaled up or down in a predetermined cycle on the basis of the coordinate detected by the coordinate detector; and

scaling up or down, under control of the data processor, the three-dimensional object on the basis of the result of determination.

17. (Previously Presented) A computer readable media comprising a computer program allowing a computer to function as:

a display means for displaying a three-dimensional object on the screen of a display unit;

a determination means for determining an axis and direction of rotation for the three-dimensional object in a predetermined cycle on the basis of the coordinate detected by a coordinate detecting means for detecting a coordinate defined on the display screen by a user's touch; and

an object rotating means for rotating the three-dimensional object on the basis of the result of determination supplied from the determination means;

wherein the determination means determines the axis and direction of rotation for the three-dimensional object on the basis of a positional relation between the coordinate detected by the coordinate detecting means and a central coordinate on the display screen; and



wherein the determination means further determines a rotating speed for the three-dimensional object on the basis of a distance between the coordinate detected by the coordinate detecting means and a central coordinate on the display screen, and the object rotating means rotates the three-dimensional object at the determined speed.

18. (Previously Presented) A computer readable media comprising a computer program allowing a computer to function as:

a display means for displaying a three-dimensional object on the screen of a display unit;

a determination means for determining a moving direction for the three-dimensional object in a predetermined cycle on the basis of the coordinate detected by a coordinate detecting means for detecting a coordinate defined on the display screen by a user's touch and barycentric coordinate of the three-dimensional object on the display screen; and

an object moving means for moving the three-dimensional object on the basis of the result of determination supplied from the determination means;

wherein the determination means determines a moving speed on the basis of a distance between the coordinate detected by the coordinate detecting means and barycentric coordinate of the three-dimensional object on the display screen, and the object moving means moves the three-dimensional object at the determined speed.

19. (Previously Presented) A computer readable media comprising a computer program allowing a computer to function as:

a display means for displaying a three-dimensional object on the screen of a display unit;

a determination means for determining whether the three-dimensional object is to be scaled up or down in a predetermined cycle on the basis of the coordinate detected by a coordinate detecting means for detecting a coordinate defined on the display screen by a user's touch; and

an object scale-up/-down means for scaling up or down the three-dimensional object on the basis of the result of determination supplied from the determination means.